



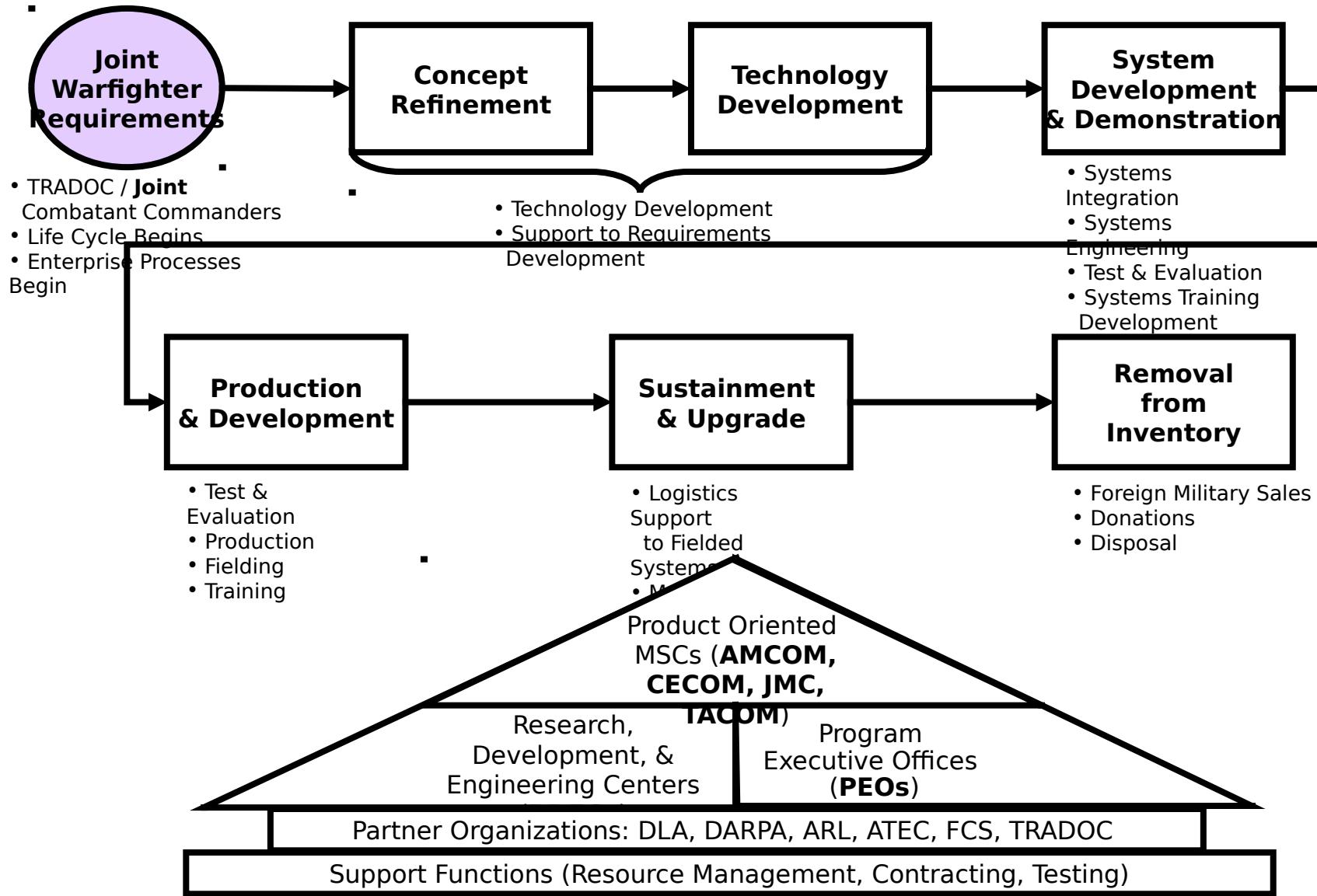
# Industrial Base Policy Surging Organic-Meeting Urgent Needs

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**MG N. Ross Thompson III**  
**Commanding General**  
**U.S. Army Tank-automotive and Armaments**  
**Command**

# Life Cycle Management Enterprise

## - Integrated Across the System Life Cycle -



# Life Cycle Management Concept

## Terms of Reference (TOR)

- **READINESS:**
  - Designed for maximum readiness and capability potential (today / future)
- **CULTURE:**
  - Achieves collaborative operating environment to broaden perspectives past A,L,&T stovepipes to LCM focus (because they want to)
  - Create the reality and the perception that the concept is beneficial to all
- **VOICE OF THE CUSTOMER:**
  - Based on the needs of all customers
- **EFFECTIVENESS and EFFICIENCY:**
  - $(Q \uparrow)(\$SR \downarrow) / \text{Investment} = \text{ROI}$
- **INCLUSIVE LIFE CYCLE MANAGEMENT:**
  - Integrates Acquisition, Logistics, and Technology (A, L, & T) in all phases
- **COLLABORATION, COORDINATION, COMMUNICATION:**
  - Streamlined decision-making
- **WORKFORCE:**
  - Positions the workforce to meet needs of the future
- **RESOURCES:**
  - Will not result in the need for increased resources (manpower or dollars) at the Enterprise level, although internal cross-leveling may be desirable
  - When resources are freed up through streamlining, we will be able to reinvest them at the Enterprise level.
  - We will pursue following the Air Force model in manpower funding (all manpower spaces are centrally funded) - this will require HHQ assistance
- **LEGAL:**
  - Minimize legal implications

# **Industrial Base Support Agreement**

## **in support of Life Cycle Management**

- **DODD 5000.1 & DODI 5000.2 Requirements Support:**
  - Acquisition strategy
  - PEO program review support
  - Industrial base capabilities assessments
  - Market research
- **Industrial Base Analytical Support:**
  - Monitor risk associated with industrial base capability and/or capacity for end-items and PEO-identified critical parts / components / producers.
- **Strategic Planning Support:**
  - Industrial base strategic investment and modernization
  - Production Base Support Program
  - Capital Investment Program
- **Organic Industrial Base:**
  - The Army-owned industrial base is to be sized and postured to support the force structure with effective, efficient, economical, practical, responsive, multi-functional, environmentally responsible and compliant facilities.

# **Industrial Enterprise Core Depot Capability Management Process**

- **Baseline: CECOM Core Depot Maintenance Model**
  - Coordinated effort between CECOM and Enterprise Partners
  - Applies to system and component level hardware and software workload
  - Process can be employed regardless of the phase of the program
  - Signed process documentation required
- **Objectives:**
  - Insure requirements of U.S. Code Title 10 Section 2464
    - Support proper work loading of designated Core Logistics capability and capacity
    - Evaluate workload. If there is not adequate, organic warm base technical capability and capacity to support minimum contingency requirements for a system, a portion of the workload will be designated "Basic Core."
    - Ensure Non-Core workload is subjected to a Best Value Analysis considering both organic and contracted depot maintenance sources
  - Promote Public/Private Partnerships
  - Develop and track Metrics

# **Industrial Enterprise Core Depot Capability Management Process**

- **Step 1:** Formation of Weapon System IPT Process
  - The management process is implemented with formation of Weapon System Integrated Product Teams. The IPT will consist of LCMC and enterprise partners.

<b>WS IPT Membership (Recommended)</b>	
PM	Engineering
OEM	Production Management
ILSC, LRC, IMMC (Supply, Maintenance)	Industrial Base Management (Commercial, Organic)
Product Assurance	Acquisition
<b>Supporting Organizations</b>	
DLA	DCMA

- **Step 2:** Preliminary assessment of alternative support strategies
- **Step 3:** Minimize and consolidate contractual requirements
- **Step 4:** Develop and include depot support strategy in Acquisition Planning and Source Selection process
- **Step 5:** Conduct Core Depot Assessment
- **Step 6:** Conduct Best Value Analysis
- **Step 7:** Prepare Final Report and Recommendations

# **Industrial Enterprise Core Depot Capability Management Process**

- **Summary**

- Standard process that can be utilized by all LCMCs on all commodity groups
- Fosters collaboration and teamwork between enterprise partners
- Promotes preservation of Core Logistics capabilities and capacity
- Process provides decision makers with valuable data outputs
- Supports development and tracking of metrics

# Organic Industrial Capabilities

## “Ability to Surge”

### Field Support

- Deployable industrial skills available at a moment's notice
- Forward Repair Activities (FRAs)
- Regional Support Centers (RSCs)
- Vehicle / Small Arms Support Centers
- LARs aligned to BCTs / UAs
- Electronic Sustainment Support Center
- Aviation Classification & Repair Depot (AVCRAD)
- Component Repair Companies

### Maintenance / Repair / Support

- Fly – Away Packages - C2, Maintenance, Parts
- Supply Support Shipments - medical, water, fuel storage / distribution assemblies, landing mats, shelters

### Administrative Advantages

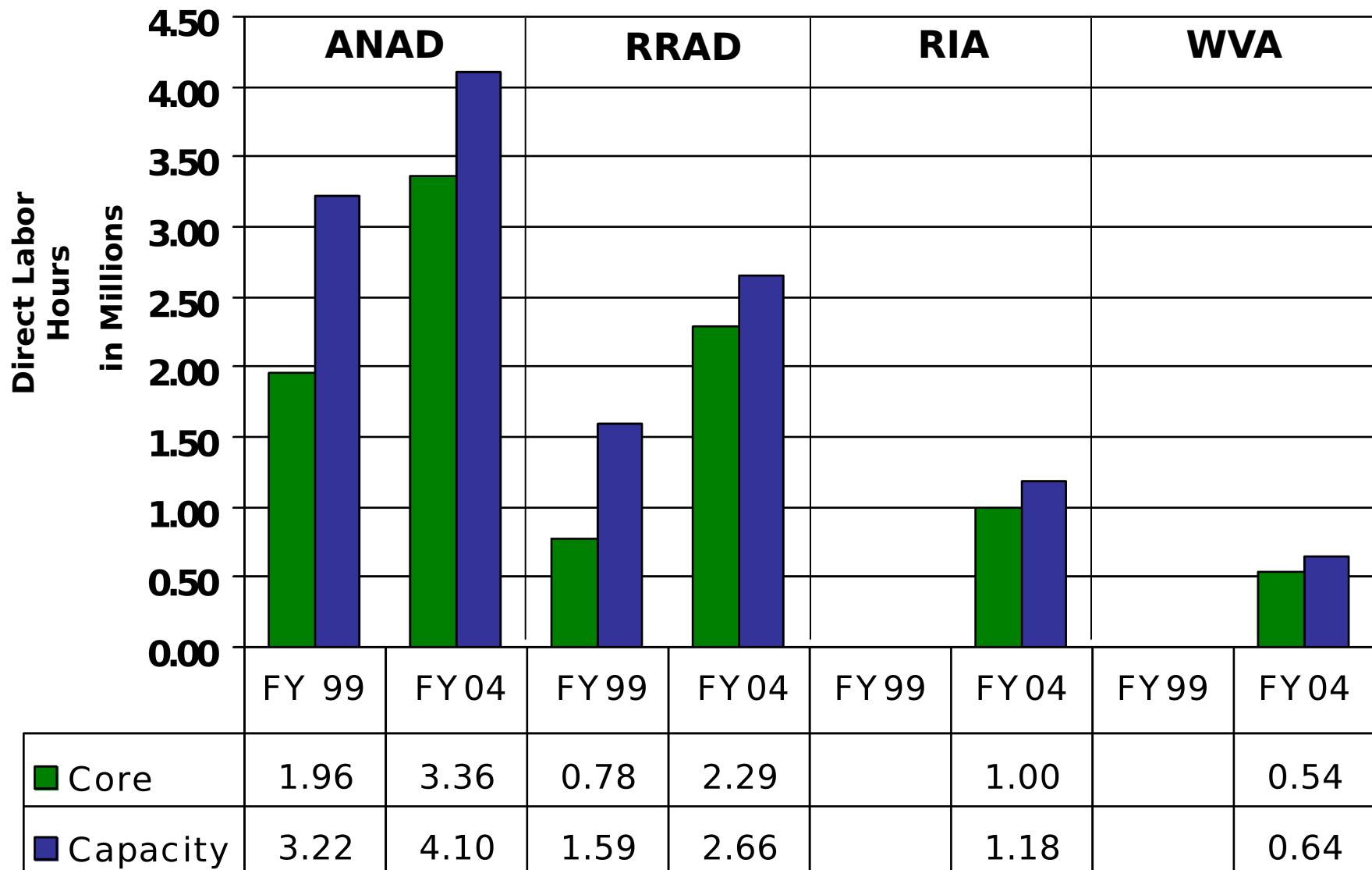
- Contract lead time significantly reduced
- Use of Commander's Commencement Orders expedites production, maintenance, and field support processes
- Leverage capability of multiple sites without competition
- Expedites CRC Processing

### Production / Modification

- HMMWV Armor Survivability Kits
- M6 Pedestal Gun Mounts
- Helicopter Rotor Blades
- T700 Family of Helicopter Engines
- Forward Repair System
- Contact Maintenance Truck Heavy
- Spare / Repair Parts

# Core Workload Comparison to Capacity

## Anniston Army Depot and Red River Army Depot



# HMMWV RECAP

	<b>CIRCA 2002</b>	<b>A/O 28 JUL 04</b>
Configuration	“Focused” Recap w/ current MWO’s added (M998 TO M998)	Convert M998 to M1097
Cost	\$25K	\$40K in FY04
Quantity	FY04 – 1065 FY05 – 1085 FY06-09 – 1110 per yr	FY04 – 198 FY05 – 2000 + FY06-09 – 3000 per yr

- Both the initial and current plans assumed all work will be done in the depots.
- In FY03/04, an effort was initiated to divide the work equally between the depot and a contractor. However, the plan is now to use the depots.
- Will use capabilities of the entire industrial base (organic and commercial) to meet Army requirements

# Enterprise Excellence Implementation (Lean / Six Sigma / QMS / VOC)

**AMC Objective...**  
**Integrate E<sup>2</sup> to all**  
**Business**  
**Processes, both**  
**Manufacturing &**  
**Service**

**GAO Report from July 03**  
**cites efficiency and**  
**productivity**  
**improvements in Army**  
**depot maintenance**  
**operations resulting**  
**from Lean**  
**implementation**

## Selected Manufacturing Projects

### ANNISTON ARMY DEPOT

- ✓ Reciprocating Engines
- ✓ Tank Turbine Engine Process
- ✓ Small Arms Repair
- ✓ Transmissions

### CORPUS CHRISTI ARMY DEPOT

- ✓ Black Hawk Helicopter A to A Recap
- ✓ Black Hawk Helicopter Transmission
- ✓ Apache & Black Hawk Engine (Six Sigma)

### LETTERKENNY ARMY DEPOT

- ✓ Patriot Ground Support Equipment
- ✓ Ground Mobility Vehicles
- ✓ Mobile Kitchen Trailers
- ✓ Generators

### RED RIVER ARMY DEPOT

- ✓ Bradley Infantry Fighting Vehicle Engine
- ✓ Multiple Launch Rocket System Remanufacturing
- ✓ Small Emplacement Excavator Recap
- ✓ Kingpin Fabrication
- ✓ Bradley Overhaul
- ✓ Heavy Truck Overhaul
- ✓ HMMWV

### TOBYHANNA ARMY DEPOT

- ✓ Sidewinder Air-to-Air Missile
- ✓ Firefinder Counter-Fire Radar Recap
- ✓ Communications System
- ✓ Image Intensification System

### ROCK ISLAND ARSENAL

- ✓ Forward Repair System
- ✓ Small Arms Gauges

### SIERRA ARMY DEPOT

- ✓ Medical Supplies
- ✓ General Supplies Central Receiving
- ✓ Force Provider Modules
- ✓ Long Term Storage (LTS) Hospitals

### BLUE GRASS ARMY DEPOT

- ✓ Ammunition Shipping & Receiving
- WATERVLIET**
- ✓ 20 mm M256 Cannon
- ✓ Howitzer Split Ring
- ✓ Manufacturing Process Tooling

### MCALESTER ARMY AMMUNITION PLANT

- ✓ Ammunition Out-loading Process
- ✓ Explosive Reclamation Line
- ✓ Tritonal Reclamation Line

### CRANE

- ✓ Surveillance Inspection Process
- ✓ Anti-tank Rocket Demilitarization Operations

### PINE BLUFF ARSENAL

- ✓ Chemical Protective Mask
- ✓ Chemical Decontamination Equipment

# Beyond Lean Six Sigma

## Increasing the OPTEMPO of Cultural Transformation

### Vision

*An ALT culture of innovation that enables rapid Transformation to the Future Force and continuously creates greater value for the Warfighter.*

### Strategy

- Deploy a program of **continuous improvement** that reaches every product and every person in the ALT enterprise.
- Use the Lean Six Sigma philosophy as the continuous improvement starting point while adapting other **best practices** to the unique demands of Warfighter support.
- Extend continuous improvement beyond ALT boundaries and into every component of the **supply chain** by establishing new partnering relationships with customers and suppliers.
- Institutionalize learning and execution through the implementation of formal **management processes** including Quality Management Systems.
- Use **metrics** to track performance, demonstrate value and enable decisions.

# Summary

- LCMCs are an opportunity to improve support to the joint warfighter
- Enterprise Excellence must be the way we operate every day
- Know and use the capabilities of both the commercial and organic industrial base
- Don't let “colors of money” be a criteria for decisions
- Interdependence and teamwork must be our culture

# Backup

# The Need for Enterprise Excellence

- The Opportunity
  - Effective & efficient support to the joint warfighter is sub-optimized
  - We lack true teaming & partnerships across our diverse organizations that have responsibilities throughout the life cycle
- The Impact
  - Destructive competition for project/product ownership & funding
  - Duplicated effort; duplicated capabilities
  - Missed opportunities for improvement
  - Wasted time, dollars, and effort

***By and large, you've got to do some things right away that say you're serious about change, or change will never happen in this business.***

***LTG Joseph L. Yakovac Jr.***

***Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology***

# Life Cycle Management Concept Guiding Principles

1. We are results oriented and warfighter focused.
2. People are paramount.
3. We resolve issues at the appropriate level.
4. Our partnerships are agile, responsive, streamlined.
5. We emphasize leadership not management.
6. Our culture is collaborative, interdependent, and based on open communication.
7. We improve and integrate our business practices.
8. We reduce bureaucracy and hierarchy.
9. We align responsibility, authority, funding, evaluation and compensation.
10. Integrated teams are the cornerstone of our organization.
11. Metrics will focus on improving quality, reducing cost, meeting schedule, balancing risk, and **our responsiveness to the warfighter**

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## Some AMC Lean & Six Sigma Success Stories: Manufacturing

Depot / Arsenal	Program	Timeframe	Productivity	Cycle Time	Costs	Output
ANAD	Reciprocating Engine	FY03 / 04	+ 31%	- 40%	-\$5.8M	
	Tank Turbine Engine	FY05	+ 14%		-\$ 8.8 M	
RRAD	Heavy Truck		+ 20%			
	Track & Road Wheel		+ 57%		+ 23% Increased Revenue	
	Small Emplacement Excavator		+ 44%			> 100%
LEAD	Patriot Launcher	FY03 / 04		- 19 K hrs / yr	-\$ 3 M	
CCAD	Apache & Black Hawk Helicopter Engine		+23 %	- 62%		
	Black Hawk Helicopter A to A Recap		Redeployed 4 workers		Reduced floor space 9700 sq ft	
RIA	Forward Repair System		+ 20%	- 40%		+ 40%
TYAD	Sidewinder Missile		+ 12%		- 46%	
	Target Identification Transponder	FY03 / 04		- 18%	-\$ 1.1M	
SIAD	Long Term Storage (LTS) Hospitals	FY04	+ 55%		-\$ 200K	+ 31%
WVA	120MM M256 Cannon Program	FY04		-6%	\$157K	
	Manufacturing Tooling	FY04 / 05	Inventory -66% Reduction		\$.5M-\$1M	